FNM-320 Sounders Conventional

BOSCH
Invented for life

- Volume up to 112 dB(A)
- Can be used in adverse environmental conditions
- For 12 V DC and 24 V DC
- Reverse polarity protection
- Available for surface and flush-mounted cable feed

The FNM-320 Sounders are acoustic signaling devices with a sound transducer.

Functions

The integrated sound transducer offers a selection of 32 tone variants, including various wailing tones, diverse signals for fire alarm (e. g. the DIN tone according to EN 457 / DIN 33404) and other special modulations.
The tones are set with a 5-pin DIP switch in the signaling device. With a selected tone type, on activation of the second input, the second tone type is switched on. An additional switch provides two settings, either full output or an attenuation of 10 dB(A).
Depending on the tone type, volume set, and operating voltage, the sound pressure varies up to a maximum of 112 dB(A).
Monitored connection to fire panels is possible.
The bayonet lock enables simple mounting.

Certifications and approvals

Region	Certification	
Germany	VdS	G 210036 FNM-320-Serie
	VdS	G 210037 FNM-320LED-SRD
Europe	CE	FNM-320-SRD,FNM-320-FRD,FNM-320-SWH,FNM-320-FWH
	CE	FNM-320LED-SRD
	CPD	0832-CPD-1374 FNM-320-SRD_FN-320-SWH_FNM-320-FRD_FNM-320-FWH
	CPD	0832-CPD-1375 FNM-320LED-SRD
Poland	CNBOP	1182/2012 FNM-320

Installation/configuration notes

- The device can be connected to the following panels:
  - FPA-5000 / FPA-1200 with NZM 0002 A or FLM-420-NAC
  - BZ 500 LSN, UEZ 1000 LSN, UEZ 2000 LSN, UGM 2020
- Doubled screw clips exist for looping-in of voltage.

- FNM-320LED-SRD is not certified to EN 54-23. The beacon is not suitable for fire alarm use within the EU.
- The tones certified according to EN 54-3 are shown in the last columns of the tone tables. The sound pressure levels (SPL) are measured at 28 or 15 V DC at maximum volume and at the loudest node. All other SPL measurements are taken on axis at 1 m and are not third party verified.

Tone Table FNM-320-SRD/-SWH/-FRD/-FWH

(1)	(2)						12/24VDC		EN54-3 15/28VDC
							mA	dB(A)	dB(A)
1	14	11111		800 & 970Hz	2Hz (250ms ~ 250ms)	BS	6/13	95/101	*
2	14	11110		800 & 970Hz	7Hz (7/s)	BS	8/12	94/100	*
3	14	11101		800 & 970Hz	1Hz (1/s)	BS	6/12	95/102	92/95
4	14	11100		2850Hz			16/32	99/105	*
5	4	11011		2400 ~ 2850Hz	7Hz		16/32	103/109	*
6	4	11010		2400 ~ 2850Hz	1Hz		16/32	105/112	*
7	14	11001		500 ~ 1200Hz	3s | 0.5s | 3s | 0.5s...	NEN	6/12	97/103	93/97
8	14	11000		1200 ~ 500Hz	1Hz	DIN	7/15	96/102	93/94
9	4	10111		2400 & 2850Hz	2Hz (250ms ~ 250ms)		15/31	99/105	*
10	14	10110		970Hz	0.5Hz (1s | 1s)		5/8	95/101	*
11	4	10101		800 & 970Hz	1Hz (500ms ~ 500ms)	BS	6/12	95/101	*
12	4	10100		2850Hz	0.5Hz (1s | 1s)		9/17	99/105	*
13	14	10011		970Hz	0.8Hz (250ms | 1s)		3/5	94/101	*
14	14	10010		970Hz		BS	7/14	95/101	93/95
15	14	10001		554 & 440Hz	100ms ~ 400ms	NFS	8/17	96/102	*
16	16	10000		660Hz	3.3Hz (150ms | 150ms)		4/6	94/100	*
17	17	01111		660Hz	0.28Hz (1.8s | 1.8s)		4/7	95/101	*
18	18	01110		660Hz	0.05Hz (6.5s | 13s)		3/6	95/101	*
19	19	01101		660Hz			5/10	95/101	*
20	20	01100		554 & 440Hz	0.5Hz (1s | 1s)		7/16	96/102	*
21	21	01011		660Hz	1Hz (500ms ~ 500ms)		4/6	94/101	*
22	14	01010		2850Hz	4Hz (150ms | 100ms)		12/27	98/104	*
23	14	01001		800 ~ 970Hz	50Hz	BS	6/12	93/100	*
24	4	01000		2400 ~ 2850Hz	50Hz		15/32	102/108	*
25	25	00111		970Hz	3 x 500ms|1.5s |3 x 500ms...	ISO 8201	4/7	95/101	*
26	26	00110		800 ~ 970Hz	3 x 500ms|1.5s |3 x 500ms...	ISO 8201	4/6	95/102	*
27	27	00101		970 & 800Hz	3 x 500ms|1.5s |3 x 500ms...	ISO 8201	3/6	94/101	*
28	10	00100		800 & 970Hz	2Hz (250ms ~ 250ms)	BS	6/12	95/101	*
29	988Hz	00011		990 & 650Hz	2Hz (250ms ~ 250ms)	BS	10/20	99/105	93/96
30	510Hz	00010		510 & 610Hz	2Hz (250ms ~ 250ms)	BS	8/16	94/100	91/92
31	14	00001		300 ~ 1200Hz	1Hz		10/14	98/103	*
32	510Hz	00000		510 & 610Hz	1Hz (500ms ~ 500ms)	BS	8/16	95/100	*

Sound pressure level tolerance is ±3 db(A).

Tone Table FNM-320LED-SRD

							@20 °C		
							mA	dB(A)	EN54-3 @28VDC dB(A)
1	14	11111		800 & 970Hz	2Hz (250ms ~ 250ms)	BS	19	100	*
2	14	11110		800 & 970Hz	7Hz (7/s)	BS	19	101	*
3	14	11101		800 & 970Hz	1Hz (1/s)	BS	19	101	95
4	14	11100		2850Hz			33	110	*
5	4	11011		2400 ~ 2850Hz	7Hz		31	110	*
6	4	11010		2400 ~ 2850Hz	1Hz		31	110	*
7	14	11001		500 ~ 1200Hz	3s | 0.5s | 3s | 0.5s...	NEN	21	98	97
8	14	11000		1200 ~ 500Hz	1Hz	DIN	17	98	94
9	4	10111		2400 & 2850Hz	2Hz (250ms ~ 250ms)		31	109	*
10	14	10110		970Hz	0.5Hz (1s | 1s)		13	100	*
11	4	10101		800 & 970Hz	1Hz (500ms ~ 500ms)	BS	19	100	*
12	4	10100		2850Hz	0.5Hz (1s | 1s)		25	109	*
13	14	10011		970Hz	0.8Hz (250ms | 1s)		9	96	*
14	14	10010		970Hz		BS	21	101	95
15	14	10001		554 & 440Hz	100ms ~ 400ms	NFS	13	93	*
16	16	10000		660Hz	3.3Hz (150ms | 150ms)		10	86	*
17	17	01111		660Hz	0.28Hz (1.8s | 1.8s)		13	88	*
18	18	01110		660Hz	0.05Hz (6.5s | 13s)		15	88	*
19	19	01101		660Hz			15	89	*
20	20	01100		554 & 440Hz	0.5Hz (1s | 1s)		14	96	*
21	21	01011		660Hz	1Hz (500ms ~ 500ms)		11	87	*
22	14	01010		2850Hz	4Hz (150ms | 100ms)		23	109	*
23	14	01001		800 ~ 970Hz	50Hz	BS	19	101	*
24	4	01000		2400 ~ 2850Hz	50Hz		26	110	*
25	25	00111		970Hz	3 x 500ms|1.5s|3 x 500ms...	ISO 8201	15	99	*
26	26	00110		2850Hz	3 x 500ms|1.5s|3 x 500ms...	ISO 8201	21	108	*
27	27	00101		4000Hz			36	83	*
28	10	00100		800 & 970Hz	2Hz (250ms ~ 250ms)	BS	18	100	*
29	33	00011		990 & 650Hz	2Hz (250ms ~ 250ms)	BS	22	99	96
30	35	00010		510 & 610Hz	2Hz (250ms ~ 250ms)	BS	16	96	92
31	31	00001		300 ~ 1200Hz	1Hz		22	96	*
32	32	00000		4000Hz			36	83	*

Technical specifications

Electrical

Operating voltage	9 - 30 V DC
Max. current consumption	
• FNM-320-SRD/-SWH/-FRD/-FWH	33 mA
• FNM-320LED-SRD	36 mA
Monitoring	Reverse polarity

Mechanics

Dimensions (W x H)	
• FNM-320-FRD/-FWH	Ø 93 x 63 mm
• FNM-320-SRD/-SWH	Ø 93 x 91 mm
• FNM-320LED-SRD	Ø 93 x 107 mm

Weight	
• FNM-320-SRD/-SWH/-FRD/-FWH	250 g
• FNM-320LED-SRD	300 g
Housing material	ABS V0, PC
Color	Red, RAL 3001 White, RAL 9010

Environmental conditions

Permissible operating temperature	
• FNM-320-SRD/-SWH/-FRD/-FWH	-25 - 70 °C
• FNM-320LED-SRD	-10 - 55 °C
Permissible rel. humidity	EN 54-3
Protection class as per EN 60529	
• FNM-320-FRD/-FWH	IP 54 *
• FNM-320-SRD/-SWH	IP 65 *
• FNM-320LED-SRD	IP 65 *

* Manufacturers specification, not third party verified

Special features

Max. sound pressure	
• At 12 V	105 ± 3 dB(A)
• At 24 V	112 ± 3 dB(A)
FNM-320LED-SRD	
• Light output	> 0.5 cd
• Flash rate	1 Hz